PATENT ABSTRACTS OF JAPAN

(11)Publication number : 09-230221
(43)Date of publication of application : 05.09.1997

t.CI. G02B 7/198

pplication number : 08-031596
ate of filing : 20.02.1996

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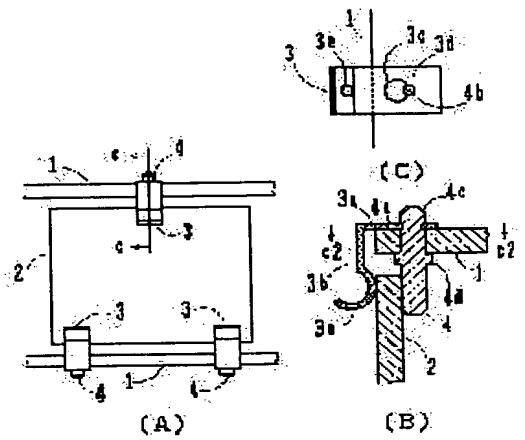
MIRROR HOLDING STRUCTURE

bstract:
3LEM TO BE SOLVED: To provide holding technique facilitating hment without applying stress to a mirror.
JTION: In the case of holding the mirror 2 in the chassis 1 of a liquid al projector, a pin 4 is erected on the chassis, the mirror 2 is brought ontact with the side surface of the pin 4 and held and fixed by an hing metal fitting 3. The side surface of the metal fitting 3 is formed nearly L-shaped and a hole 3d is opened at one end 3a. The metal g 3 is fit in a groove 4a provided on the outer periphery of the pin 4 ivotally attached so as to freely turn with the shaft of the pin 4 as er.



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[MS

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m(s)]
m 1] It is the maintenance structure of the mirror which made said fixing metal the letter of the abbreviation for L
cters in the mirror maintenance structure of holding said mirror in a fixed location with the fixing metal which said
ır is contacted on the side face of an approximate circle column-like pin and this pin in which a mirror is
ioned, and is pinched, and was characterized by fixing a said L character-like end to revolve free [rotation]
ring on the shaft of said pin.
m 2] Maintenance structure of the mirror according to claim 1 characterized by attaching outside said slot the inner
mference of the hole which established the shaft of this pin, and the slot of the direction of a right angle in the
hery of the part which fixes the fixing metal of said pin to revolve, and carried out opening to the fixing-with-a-
le part of this fixing metal.
m 3] The hole which carried out opening to said fixing metal is the maintenance structure of the mirror according
ıim 2 characterized by consisting of a hole which has the outer diameter of the pars basilaris ossis occipitalis of the
stablished in the place distant from the hole which has the outer diameter which can penetrate said pin which
ɔd out opening to the place near a mirror, and the mirror connected with this hole at the periphery of said pin which
ɔd out opening, and the bore of abbreviation identitas.
m 4] Said fixing metal is claim 1 characterized by constituting from a flat spring, and the maintenance structure of
ror according to claim 2 or 3.
m 5] The ingredient of fixing metal is the maintenance structure of the mirror according to claim 4 characterized by
dering as phosphor bronze.
m 6] The side face at the tip which pinches the mirror of a flat spring is the maintenance structure of the mirror
ding to claim 4 which considered as the shape of upper limit of the abbreviation for 2 characters, and was
ıcterized by preparing opening in the top-face part.
m 7] Said pin is the maintenance structure of the mirror according to claim 1 characterized by pressing fit and
hing in the hole which carried out opening to the chassis which attaches said mirror.
m 8] Said pin is the maintenance structure of the mirror according to claim 1 which carried out to three and was
ıcterized by holding three points of said mirror.
m 9] The pin of said approximate circle pilaster is the maintenance structure of the mirror according to claim 1
ıcterized by considering as the slack type which makes the part which said mirror contacts the maximum outer
eter.
m 10] The pin of said approximate circle pilaster is the maintenance structure of the mirror according to claim 1
ıcterized by preparing the heights which have the spherical surface into the part which said mirror contacts.
m 11] Said fixing metal is the maintenance structure of the mirror according to claim 9 or 10 characterized by a
ɔr considering as an abbreviation flat surface in near in contact with a pin.

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AILED DESCRIPTION

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iled Description of the Invention]
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l of the Invention] This invention relates to the maintenance structure of a mirror [side / by the maintenance used liquid crystal projector etc. / mirror] with little distortion.
2]
cription of the Prior Art] Drawing 4 is the (A) front view of one example of the maintenance structure of the entional mirror, the (B) side elevation (this drawing c-c enlarged section), and the (C) top view. When holding a r 42 on the chassis 41, such as a liquid crystal projector, pin 41a is stood to a chassis inside, a mirror 42 is cted on the side face of this pin, and it inserts and stops with fixing metal 43. Fixing metal 43 is fixed on the is 41 in the screw 45 grade. However, with such structure, when attaching fixing metal with a screw 45, in order to ve the turning effort to the hand of cut of a screw in the fixing metal itself, there is a possibility that it may be ult to make the contact section with the mirror 42 of fixing metal 43 in agreement with the field of a mirror 42, may be applied to a mirror, and distortion may occur. Moreover, there is also a problem of taking the time and which carries out the screw stop of the fixing metal 43.
3]
lem(s) to be Solved by the Invention] This invention aims at not having been made in view of the above-ioned trouble, and not applying stress to a mirror, and offering the maintenance technique of the easy mirror of lation.
4]
ns for Solving the Problem] Since fixing metal rotates centering on a pin according to the direction of the field of a r by standing a pin inside chassis, such as a liquid crystal projector, and attaching the fixing metal stopped on both of a mirror free [rotation] centering on the shaft of said pin between the side faces of this pin, in order that the ct section with the mirror side of fixing metal may contact a mirror side by the uniform force in accordance with a r side easily, the stress concerning a mirror becomes small. Moreover, distortion of the mirror side which the part e fixing metal pinches a pin and a mirror always serves as a pin and the minimum distance, the impossible stress to ror serves as min since the power point which pinches the mirror of fixing metal and a pin is in agreement, fore is produced for attachment can be pressed down to min.
5]
odiment of the Invention] In the mirror maintenance structure of holding said mirror in a fixed location with the g metal which said mirror is contacted on the side face of an approximate circle column-like pin and this pin in h a mirror is positioned, and is pinched, said fixing metal is made into the letter of the abbreviation for L cters, and fixes a said L character-like end to revolve free [rotation] centering on the shaft of said pin.
5] The shaft of this pin and the slot of the direction of a right angle are established in the periphery of the part h fixes the fixing metal of a pin to revolve, and the inner circumference of the hole which carried out opening to the g-with-a-spindle part of this fixing metal is attached outside said slot.
7] Let the hole which carried out opening to fixing metal be the hole of the Dharma mold which consists of a hole h has the outer diameter of the pars basilaris ossis occipitalis of the slot established in the place distant from the which has the outer diameter which can penetrate said pin which carried out opening to the place near a mirror, and irror connected with this hole at the periphery of said pin which carried out opening, and the bore of abbreviation itas.
8] Fixing metal consists of flat springs. Moreover, let the ingredient of fixing metal be phosphor bronze.
9] The side face at the tip which pinches the mirror of a flat spring is made into the shape of upper limit of the

eviation for 2 characters, and prepares opening in the top-face part.
0] A pin is pressed fit and attached in the hole which carried out opening to the chassis which attaches said mirror. ıermore, a pin is made into three and holds said mirror by three points.
1] The pin of an approximate circle pilaster swells the part which said mirror contacts, and uses it as a slack type which the part serves as the maximum outer diameter. Or the heights which have the spherical surface into the part :h the mirror of a pin contacts are prepared.
2] It is made for fixing metal to become an abbreviation flat surface in near where a mirror contacts a slack type or ›in of the spherical surface.
3]
ımple] Hereafter, the maintenance structure of the mirror of this invention is explained using a drawing. Drawing 1 ɜ (A) front view of one example of the mirror maintenance structure by this invention, the (B) side elevation (this 'ing c-c enlarged section), and the (C) top view (said drawing c2-c2 cross section). When holding a mirror 2 on the sis 1, such as a liquid crystal projector, a pin 4 is stood to a chassis, a mirror 2 is contacted on the side face of this and it inserts and stops with fixing metal 3. The side face of fixing metal 3 is made into an abbreviation L typeface, es 3d of holes in end 3a, inserts them in slot 4a prepared in the periphery of a pin 4, and is fixed to revolve free ıation] centering on the shaft of a pin 4.
4] The hole made in end 3a of fixing metal 3 is equal to the periphery of pars-basilaris-ossis-occipitalis 4b of slot 4a :h carried out opening of the hole 3c of the magnitude which can penetrate head 4c of a pin 4 to the place near a ɔr 2, connected with hole 3c, and the bore prepared in the place distant from a mirror 2 at the periphery of a pin 4, 'epares 3d of slightly large holes. Holes 3c and 3d connect and a Dharma mold is constituted. Fixing metal is hed in a pin 4 by one-touch by penetrating hole 3c of fixing metal 3 to head 4c of a pin 4, and inserting 3d of holes ɔt 4a from an outside.
5] In addition, fixing metal 3 is constituting from a flat spring which consists of an ingredient which has elasticity, as phosphor bronze, and can hold a mirror 2 with a sufficient precision.
6] The side face of other end 3b of the fixing metal 3 of L typeface is made into the same configuration as the upper of 2 characters, and when preparing hole 3e in the part equivalent to the top face and attaching a mirror 2, it is made the structure which hangs the tip of KIRI etc. on hole 3e, opens a spring, and is stopped on both sides of a mirror 2 'een pins 4.
7] Head 4c and 4d of flanges are prepared in the pin 4, and a pin 4 can stop even 4d even of flanges with a cient location precision for head 4c of a pin 4 easily to a chassis 1 by pressing fit and stopping in the hole made in hassis 1.
8] In the (A) front view of drawing 1 , the pins 4, 4, and 4 which become fixing metal 3, 3, and 3, and it and a group ɔe formed 3 sets respectively, and can consider a mirror 2 as three-point support at a chassis 1.
9] Drawing 2 is the important section sectional view of other examples of the maintenance structure of the mirror of nvention. When holding a mirror 22 on the chassis 21, such as a liquid crystal projector, a pin 24 is stood to a sis, a mirror 22 is contacted on the side face of this pin, and it inserts and stops with fixing metal 23. In this ıple, partial 24a in contact with the mirror of a pin 24 is swollen, and the shape of slack has been carried out.
0] Drawing 3 is the important section sectional view of another example of the maintenance structure of the mirror is invention. When holding a mirror 32 on the chassis 31, such as a liquid crystal projector, a pin 34 is stood to a sis, a mirror 32 is contacted on the side face of this pin, and it inserts and stops with fixing metal 33. In this ıple, heights 34a of an abbreviation globular form is prepared in the part in contact with the mirror of a pin 34. ɔover, fixing metal 33 is made into the structure of having flat-surface section 33b near [where a mirror 32 contacts 34] the part.
1]
ɔct of the Invention] This invention is carried out with a gestalt which was explained above, and does so ɔtiveness which is indicated below.
2] In the mirror maintenance structure of holding said mirror in a fixed location with the fixing metal which said ɔr is contacted on the side face of an approximate circle column-like pin and this pin in which a mirror is ioned, and is pinched Said fixing metal is made into the letter of the abbreviation for L characters, it is fixing a said aracter-like end to revolve free [rotation] centering on the shaft of said pin, and in order that the contact section the mirror side of fixing metal may contact a mirror side by the uniform force in accordance with a mirror side y, the stress concerning a mirror becomes small. Moreover, distortion of the mirror side which the part where fixing l pinches a pin and a mirror always serves as a pin and the minimum distance, the stress of a mirror serves as min ɔ the power point which pinches the mirror of fixing metal and a pin is in agreement, therefore is produced for

hment can be pressed down to min.
3] The shaft of this pin and the slot of the direction of a right angle are established in the periphery of the part
h fixes the fixing metal of a pin to revolve, and fixing metal can be attached in it without a screw free [rotation]
ring on the shaft of a pin by one-touch by attaching outside said slot the inner circumference of the hole which
ed out opening to the fixing-with-a-spindle part of this fixing metal.
4] A hole [having carried out opening to fixing metal] can make it structure [not separating easy], once attach
g metal easy and it attached by considering as the hole of a Dharma [consisting of a hole / having the outer
eter of the pars basilaris ossis occipitalis of a slot / having prepared in the place near a mirror at the periphery of
pin / having carried out opening to a place distant from a mirror / connecting with a hole / having an outer
eter / that said pin / having carried out opening / can penetrate / and this hole /, and the bore of abbreviation
itas] mold.
5] Fixing metal is constituting from a flat spring which consists of phosphor bronze etc., and can pinch a mirror
a sufficient precision between pins.
6] The side face at the tip which pinches the mirror of a flat spring is made into the shape of upper limit of the
eviation for 2 characters, it is preparing opening in the top-face part, and it becomes easy for a mirror to attach it.
7] A pin is pressing fit and attaching in the hole which carried out opening to the chassis which attaches said mirror,
a pin is attached in it with a sufficient location precision to a chassis. Furthermore, a pin is made into three, and it is
ing said mirror by three points, and the field location of a mirror is determined as one and it is held at stability.
8] The pin of an approximate circle pilaster swells the part which said mirror contacts, and uses it as a slack type
which the part serves as the maximum outer diameter. Or the stress to the mirror by the error of the location
ision of the shaft orientations of a pin is absorbable by preparing the heights which have the spherical surface into
art which the mirror of a pin contacts.
9] Fixing metal is making it a mirror become an abbreviation flat surface in near in contact with a slack type or the
f the spherical surface, and can cover gap of the power point of fixing metal and the mirror of a pin which contacts.

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WINGS

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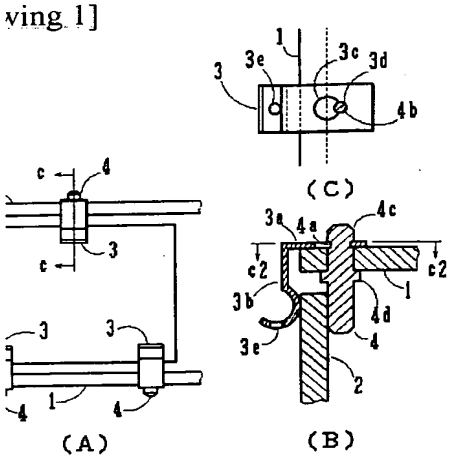

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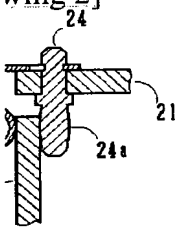

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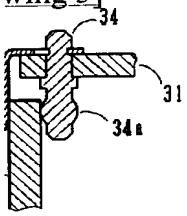

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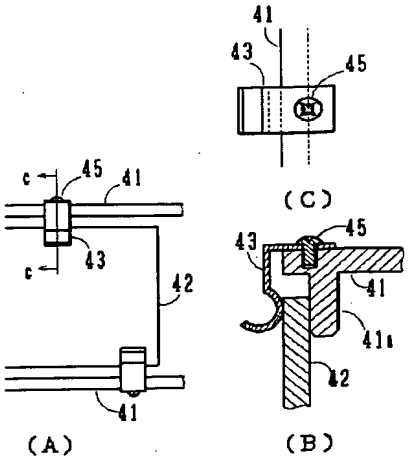

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